

Unit 1 Review

Target 1A

1. Write the statement in symbols **AND** sketch a picture.

Segment AM is congruent to Segment MB \_\_\_\_\_



$$\overline{AM} \cong \overline{MB}$$

2. Name the figure shown:

a.



LINE  $\overleftrightarrow{AB}$

b.



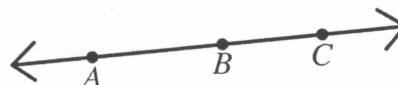
LINE SEGMENT  $\overline{DE}$

c.



RAY  $\overrightarrow{DC}$

- d. name two opposite rays.



$\overrightarrow{BA}$  AND  $\overrightarrow{BC}$

Target 1B

3. Graph and label the points: A(-5, 4), B(6, 4), C(6, -3), and D(6, 0) Targets B & G

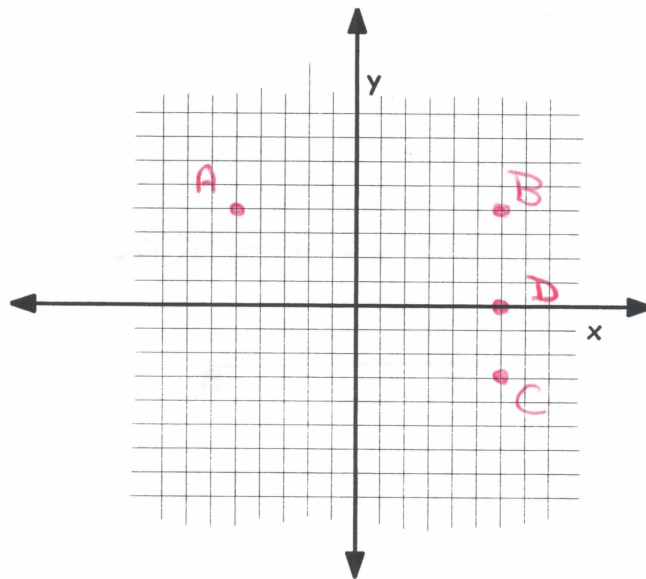
Using these points, determine if the following sets of points are **collinear**, **noncollinear**, **coplanar**, and/or **noncoplanar**. You should have two answers for each set of points!

A, B COLLINEAR, COPLANAR

B, C ", "

B, C, D ", "

A, B, C NONCOLLINEAR, "



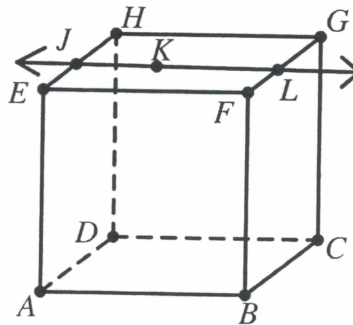
Target 1B & 1C

4. Use the picture below to answer the questions. (Target A, B, C)

Name 3 collinear points: JKL OR H, J, E  
or G, L, F

Name a plane MANY

Name a line MANY



Name the intersection of ABCD and BCGF:  $\overline{BC}$

Name the intersection of  $\overleftrightarrow{JK}$  and  $\overleftrightarrow{FG}$  POINT L

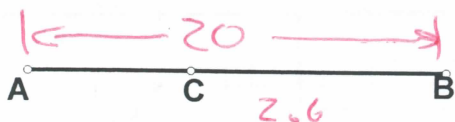
Target 1D

5. Measure each segment in inches and centimeters/millimeters.



Target 1E

5. If  $AB = 20\text{ cm}$  and  $CB = 2.6\text{ cm}$ , find AC. (Target E)



AC = 17.4 cm

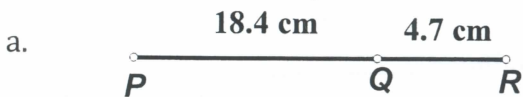
$AC + CB = AB$

$AC + 2.6 = 20$

$- 2.6 \quad - 2.6$

AC = 17.4 cm

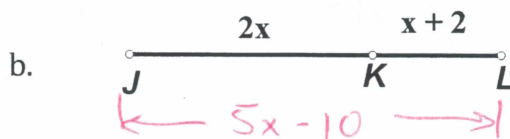
5. Find the measurement of each segment. **For b also find the value of x.**



equation:  $PQ + QR = PR$   
 $18.4 + 4.7 = 23.1 \text{ cm}$

$PQ = 18.4 \text{ cm}$        $QR = 4.7 \text{ cm}$

$PR = 23.1 \text{ cm}$



$JK = 2x, KL = x + 2, JL = 5x - 10$

equation:  $JK + KL = JL$

$x = 6$

$KL = 8$

$= x + 2$   
 $= 6 + 2$   
 $= 8$

$2x + x + 2 = 5x - 10$   
 $3x + 2 = 5x - 10$   
 $-3x \quad -3x$   
 $2 = 2x - 10$   
 $+10 \quad +10$   
 $12 = 2x$   
 $\frac{12}{2} = \frac{2x}{2}$   
 $6 = x$

$JK = 12$   
 $= 2x = 2 \cdot 6 = 12$   
 $JL = 20$   
 $= 5x - 10$   
 $= 5(6) - 10$   
 $= 30 - 10$   
 $= 20$

**Target 1F**

6. If M is the midpoint of  $\overline{AB}$  and  $AB = 22$  ft, find AM and MB. (Hint: DRAW A PICTURE!)

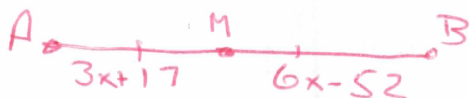


$\overline{AM} \cong \overline{MB} \Rightarrow AM = MB = \frac{AB}{2} = \frac{22}{2} = 11$

$AM = 11$

$MB = 11$

7. If M is the midpoint of  $\overline{AB}$ , and  $AM = 3x + 17$ ;  $MB = 6x - 52$ , find x, AM, MB & AB. (Target F)



$AM = MB$

$3x + 17 = 6x - 52$   
 $-3x \quad -3x$   
 $17 = 3x - 52$   
 $+52 \quad +52$   
 $69 = 3x$   
 $\frac{69}{3} = \frac{3x}{3}$   
 $23 = x$

$x = 23$        $AM = 86$

$MB = 86$        $AB = 172$

$AM = 3x + 17$   
 $= 3(23) + 17$   
 $= 69 + 17$   
 $= 86$

$MB = 6x - 52$   
 $= 6(23) - 52$   
 $= 138 - 52$   
 $= 86$

$AB = AM + MB$   
 $= 86 + 86$   
 $= 172$

**Target 1G & 1H**

8. Find the distance and midpoint for each pair of points:

a. L (-7, 0) and M (5, 9)

$d = \sqrt{(5 - (-7))^2 + (9 - 0)^2}$        $\left( \frac{-7+5}{2}, \frac{0+9}{2} \right)$   
 $= \sqrt{12^2 + 9^2}$        $\left( \frac{-2}{2}, \frac{9}{2} \right)$   
 $= \sqrt{144 + 81}$        $\left( -1, 4.5 \right)$   
 $= \sqrt{225}$        $(-1, 4.5)$   
 $= 15$

Distance: 15

Midpoint:  $(-1, 4.5)$

b. P (-12, -7) and Q (-8, -4)

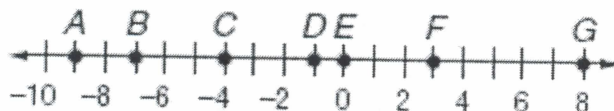
$$d = \sqrt{(-8 - (-12))^2 + (-4 - (-7))^2} = \sqrt{(-8 + 12)^2 + (-4 + 7)^2} = \sqrt{(4)^2 + (3)^2} = \sqrt{16 + 9} = \sqrt{25} = 5$$

Distance: 5

$$\left( \frac{-12 + (-8)}{2}, \frac{-7 + (-4)}{2} \right) = \left( \frac{-20}{2}, \frac{-11}{2} \right) = (-10, -5.5)$$

Midpoint: (-10, -5.5)

Use the given number line for questions 9 and 10.



9. Find the **measure** of the following segments.

$| -9 - (-4) | = 5$        $| 0 - (-1) | = 1$        $| 8 - 3 | = 5$

AC = 5      BE = 1      DG = 5

10. Find the **midpoint** of the following segments.

$\frac{-9 + (-4)}{2} = \frac{-13}{2} = -6.5$        $\frac{-1 + 0}{2} = \frac{-1}{2} = -0.5$        $\frac{-1 + 8}{2} = \frac{7}{2} = 3.5$

AC = -6.5      BE = -0.5      DG = 3.5

### Target 1G

11. If G (-4, 5), H (6, -3), and J (-8, 0) are connected to

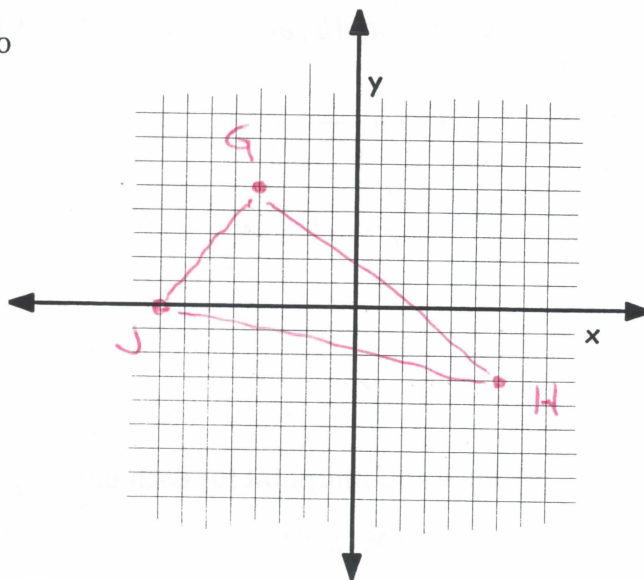
form a triangle, graph the points and find:

GH = 12.8       $= \sqrt{(-4 - 6)^2 + (5 - (-3))^2} = \sqrt{(-10)^2 + (8)^2} = \sqrt{100 + 64} = \sqrt{164} \approx 12.8$

HJ = 14.3       $= \sqrt{(-8 - 6)^2 + (0 - (-3))^2} = \sqrt{(-14)^2 + (3)^2} = \sqrt{196 + 9} = \sqrt{205} \approx 14.3$

GJ = 6.4       $= \sqrt{(-8 - (-4))^2 + (0 - 5)^2} = \sqrt{(-4)^2 + (-5)^2} = \sqrt{16 + 25} = \sqrt{41} \approx 6.4$

Perimeter = 33.5



HJ = 14.3

$= \sqrt{(-14)^2 + (3)^2}$

$= \sqrt{196 + 9}$

$= \sqrt{205}$

$\approx 14.3$

GJ = 6.4

$= \sqrt{(-4)^2 + (-5)^2}$

$= \sqrt{16 + 25}$

$= \sqrt{41}$

$\approx 6.4$